

61st Interdepartmental Hurricane Conference (IHC)

1. **Purpose:** To provide a summary of the 61st IHC, which was sponsored and chaired by Mr. Samuel P. Williamson, Federal Coordinator for Meteorology, from March 5-9, 2007, in New Orleans, Louisiana. Each year, the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM) sponsors the IHC to provide a forum for the responsible Federal agencies, together with representatives of the user communities such as emergency management, to review the Nation's hurricane forecast and warning program and to make recommendations on how to improve the program in the future. The theme of this year's conference was *The Nation's Hurricane Program: An Interagency Success Story*, and conference attendance was 190+ for the eighth consecutive year. Thanks to Mr. Kent Laborde, NOAA Communications, the 61st IHC received outstanding media coverage. Coverage included the local affiliates of the four major television networks, The Weather Channel, AP, Times Picayune, Baton Rouge Advocate, The Louisiana Network (radio), and other radio reporters. Prior to the opening session, VADM Lautenbacher participated in the IHC press conference. His remarks were extremely well received, and the questions and response from the local press and media in attendance were positive and upbeat. During the opening session, the attendees were welcomed to New Orleans by Colonel Terry Ebbert, USMC (Ret.), Director of Homeland Security for the City of New Orleans. Speaking on behalf of Mayor Ray Nagin, Colonel Ebbert highlighted the challenges that lie ahead for the city in the wake of Hurricane Katrina, which included creating a capability for all citizens of New Orleans to leave town during a hurricane evacuation, while taking appropriate actions to care for those with special needs. Then, speaking on behalf of Governor Kathleen Babineaux Blanco, Major General Hunt Downer, Assistant Adjutant General, Louisiana National Guard, thanked the tropical cyclone community for its outstanding support. He further noted that *we are at war with Mother Nature*, and it takes a team effort to mitigate the impacts of landfalling hurricanes. The proposed location for next year's conference is Charleston, South Carolina; the backup location will be Tampa, Florida. The proposed location for the 2009 conference is Biloxi, Mississippi.

2. Objectives:

- Review the Nation's tropical cyclone forecast and warning program from end-to-end, and update the *National Hurricane Operations Plan* for 2007
- Evaluate the 2006 Joint Hurricane Testbed (JHT) results and successfully transition research results into operations, as well as potential candidates for 2007 and beyond
- Address/build upon the actions and results from the 60th IHC
 - Roll out the *Interagency Strategic Research Plan for Tropical Cyclones: The Way Ahead* and begin addressing recommendations
 - Examine how hazard risk reduction improvements can be made through stronger partnerships and alliances

3. Key Events:

- Monday's Keynote Address by VADM Conrad C. Lautenbacher, Jr., USN (Ret.), Under Secretary of Commerce for Oceans and Atmosphere/Administrator of the National Oceanic and Atmospheric Administration (NOAA). VADM Lautenbacher began by highlighting the success we have achieved with track forecasts, noting the 48-hour track forecasts have improved 3.5 percent per year on average since 1985. Intensity forecasts, however, have

only improved about 0.8 percent per year—that's where the challenge lies. Whether we're talking about data collection and observations; modeling and prediction; transition from research to operations; or preparedness, response, and recovery; the key to future success is collaborative partnerships and coordination among the federal agencies, non-government organizations, the international community, the academic community, and the private sector.

One initiative that VADM Lautenbacher highlighted was the Geo-Targeted Alerting System—a joint DHS and NOAA pilot program in the National Capital Region to provide targeted warnings down to individual households and businesses, using Reverse 911-like technology to send out warning information to cell phones, pagers, PDAs, electronic billboards, and other devices in the affected area. He concluded by stating that the *Interagency Strategic Research Plan for Tropical Cyclones: The Way Ahead*, which was recently released by the OFCM, was an excellent plan that provides a comprehensive strategy to help meet the needs of the tropical cyclone warning and forecast centers and guide improvements in the Nation's tropical cyclone forecast and warning program over the next decade.

- Panel: *Interagency Strategic Research Plan for Tropical Cyclones—A View from the Top*. In an effort to continue to build agency consensus for the tropical cyclone research plan, during the opening session on Monday afternoon, Dr. Robert Serafin, NCAR Director Emeritus, moderated a panel of senior agency representatives, which included Dr. Richard Spinrad, Assistant Administrator for Oceanic and Atmospheric Research, NOAA; Dr. Jack Kaye, Associate Director for Research, Earth Science Division, NASA Headquarters; Dr. Stephan Nelson, Program Director, Physical and Dynamic Meteorology, NSF; Mr. William Curry, Deputy Technical Director, Office of the Oceanographer of the Navy; and Mr. X. William (Bill) Proenza, Director, Tropical Prediction Center/National Hurricane Center, NOAA/NWS
 - Dr. Spinrad stated that hurricane research is a multifaceted problem and that collaboration with NOAA's partners will be needed to achieve all of NOAA's goals. Proposed actions for FY 2008 include filling key gaps in existing observations of hurricane processes that affect intensity changes, analyzing existing and new observations to understand hurricane intensity changes, improving the value of hurricane intensity research, and ensuring predictions are well aligned with society's needs—all key elements of the tropical cyclone strategic research plan.
 - Dr. Kaye summarized his comments by stating that NASA maintains an active integrated program of hurricane-related research that is closely coordinated with its interagency partners. Key elements of the program include field campaigns, like the North African Monsoon Multidisciplinary Analyses (NAMMA) Experiment; satellite observations, like CloudSat; modeling; technology development (the development of new instruments for airborne testing and for potential use on future satellites); and information dissemination (the new NASA hurricane web page) and represent NASA's contribution to the interagency tropical cyclone research effort.
 - Dr. Nelson began by stating the NSF's role in hurricane research spans four directorates—geosciences; biological sciences; engineering; and social, behavioral, and economic studies. NSF funds multiagency efforts in observational hurricane research, hurricane modeling studies, basic research on meteorological processes in hurricanes, and climate change. NSF also funds hurricane research related to catastrophic sediment transport, effects on infrastructure, and the social and behavioral aspects of hurricane

- disasters. The strategic research plan for tropical cyclones should serve as a tool to help NSF prioritize funding for future hurricane research proposals.
- Mr. Curry noted that the Navy is a strong partner in the interagency tropical cyclone research community and will continue to participate at the appropriate mission level in joint development programs and interagency activities. The strengths that the Navy brings to the table include a vigorous research program in coupled ocean and atmospheric models, as well as the development of the Navy's operational global and regional models; an efficient end-to-end transition from research to operations; and, through the Office of Naval Research (ONR), funds for basic and applied research to the academic community, industry, and federal laboratories. Building on the success of the ONR CBLAST Hurricane Program, a new ONR Department Research Initiative (DRI), beginning in FY 08, will provide \$12 million over 5 years focused on the improved prediction of waves and the upper-ocean's mixed layer.
 - Mr. Proenza began by stating that despite the high level of national concern over the threat to life and the Nation's economic well-being, insufficient resources prevents needed operational science and technology infusion into the Nation's hurricane warning program. As a result, the tropical cyclone community is compelled to make extraordinary efforts to "partner" our national talents and resources to meet operational needs. In fact, the interagency strategic research plan for tropical cyclones cites the need for large investments in operational hurricane research and development efforts. The success of the plan, however, will rest on the federal agencies' ability to develop and fund an interagency implementation strategy under the sponsorship of the OFCM.
 - o Mr. John M. Barry, best-selling author of the *Rising Tide—The Great Mississippi Flood of 1927 and How It Changed America*, was an absolutely outstanding banquet speaker. In discussing the impacts hurricanes can have on complex ecosystems like New Orleans and the Mississippi River and what needs to be done to minimize those impacts, his remarks truly complemented the week's agenda. For 2006, the Richard H. Hagemeyer Award, which is presented annually in honor of the longtime Director of the NWS Pacific Region and supporter of the IHC, was awarded to Mr. Charles (Charlie) Neumann, retired National Hurricane Center scientist and legendary hurricane expert.

4. **Summary of Results:**

- o The IHC was extremely successful in:
 - Bringing the operational and research communities together to produce the best possible tropical cyclone forecast and warning program
 - Addressing the needs of the Federal agencies and user communities that have a stake in the Nation's tropical cyclone program
 - Building interagency consensus for the new strategic research plan for tropical cyclones
- o The agenda, to include two workshops, was structured to address the conference objectives.
 - The workshop, *Interagency Strategic Research Plan for Tropical Cyclones: The Way Ahead*, moderated by Dr. Paul Try, Senior Vice President, Science and Technology Corporation, focused specifically on a review of the plan, including key findings and recommendations; updates on the development of the HWRF Air-Sea-Land Hurricane Prediction System and COAMPS (Navy) Tropical Cyclone System; and opportunities for increased collaboration between academia and the operational NWP centers regarding development of the NWP systems. During the course of the discussion, three important points were made: (1) research to operations needs greater emphasis, (2) research results

- are not being fully realized or optimized, and (3) major improvements in capability are on the horizon, but if and only if our collaborative efforts are supported by increased human and infrastructure resources. Key next steps include an OFCM multiagency coordinated effort to leverage agency expertise, funding, mission needs, etc., and the development of a 10-year implementation plan for tropical cyclone research, which will prioritize our efforts as we move forward.
- The second workshop, *Hazard Risk Reduction through Stronger Partnerships and Alliances*, was moderated by Mr. Bryan Norcross, Director of Meteorology, WFOR, CBS4, Miami, Florida. Two key points that resulted from the workshop were that future progress relies (1) on building strong partnerships and (2) on placing greater emphasis on mitigation and prevention to help minimize the required disaster relief.
 - Mr. Ken Graham, NOAA/NWS, highlighted the need for the NWS to remain sensitive to their partners' requirements so that the NWS remains an indispensable source of products and services, and the NWS must collaborate with their partners along the way to keep them involved in the evolutionary process. It is also necessary to partner with customers and industry to keep up with the technology of dissemination and outreach and education of critical products and services.
 - Mr. Michael Buckley, FEMA, highlighted the work of FEMA's Mitigation Assessment Team (MAT). Through the MAT, FEMA partners with its regional offices, state and local officials, and public- and private-sector experts to study and document building performance in the aftermath of a natural disaster and develop recommendations and reconstruction guidance. A key objective is to provide recommendations that communities, states, and organizations/agencies can take to reduce damages and protect lives and property in hazard areas.
 - Ms. Marge Davenport, USGS, noted that the USGS serves the nation by providing reliable scientific information to describe and understand the Earth. During Hurricane Katrina, the USGS partnered with numerous Federal and state agencies to map storm-surge high-water marks, monitor inland storm surge, monitor the dewatering of New Orleans, and distribute land remote-sensing data critical to post-Katrina analysis and assessment.
 - Dr. Steve Lyons, The Weather Channel, started with the premise that, in an ideal world, homes would be hurricane proof, the power grid would be impervious to hurricane winds, mobile homes would have safety features to protect against hurricane damage, and evacuations would be minimized and the public would be educated on sheltering in place when possible. The question is how can we motivate risk-reduction behavior? The government and the private sector, particularly the insurance industry, need to partner to promote incentives for mitigation. According to FEMA, every dollar spent on mitigation returns four dollars in damage prevention.
 - Mr. Walt Dickerson, Mobile County Emergency Management Agency (EMA), stated that he partners with NOAA, NWS, and key local, state, and Federal agencies to implement risk-reduction activities. Mobile County's activities are focused on improving communications capabilities through the newest technologies; understanding the needs and concerns of underserved populations; conducting preparedness education programs; working in partnership to ensure local community leaders, the media, and state and local officials speak with one unified voice; and conveying to the public that the county's Federal partners support all pre-event and

post-event efforts to save life and property for all citizens of Mobile County.

- Specific changes/updates to the 2007 *National Hurricane Operations Plan* (NHOP). There were 15 action items submitted to the Working Group for Hurricane and Winter Storms Operations and Research for discussion and deliberation. Of those, 10 will be closed through incorporation into the 2007 plan. One item was informational in nature, and another was withdrawn. The remaining three (plus two open actions from the 60th IHC) will be worked through follow-on action by the group.

5. **Conference Action Items:**

- The 2007 *National Hurricane Operations Plan* will be published by May 15, 2007.
- Move out and establish the Working Group for Tropical Cyclone Research to implement the recommendations of the new strategic research plan for tropical cyclones
- Implement the *Interagency Strategic Research Plan for Tropical Cyclones: The Way Ahead*
 - Develop a succinct 10-year implementation plan to address the strategic plan's research priorities and update annually
 - Establish a Joint Action Group to develop a strategic/ implementation plan for improved tropical cyclone reconnaissance and surveillance systems
- Work with diverse user groups to develop and test message format modifications (60th IHC action)
 - Improved formats and products based on the latest communications technologies should be investigated. A related effort included a collaborative technical workshop, hosted by Texas A&M University in December 2006, to ensure that the new NWS storm-based (polygon) warnings meet the needs of both the public and private sector
 - Two types of messages should be considered: technical and actionable
 - Empirical research should be encouraged and supported to develop and test modifications to current terminology used to define levels of hurricane threat (e.g., watch, warning, CAT 1-5, etc.)
 - *Current status:* Work ongoing
- The OFCM will coordinate bringing together the appropriate federal agencies to begin the process of reviewing and improving the National hurricane warning "system" (60th IHC action)
 - All elements of the full end-to-end "system" (e.g., protocols, responsibilities, NGOs, communications, etc.)
 - *Current status:* Completed exploratory review at two locations—Charleston County, SC, and Mobile County, AL. Final report is currently being drafted. The results of the 61st IHC workshop, *Hazard Risk Reduction through Stronger Partnerships and Alliances*, provided additional insights into ongoing efforts related to this action item

Samuel P. Williamson/OFCM/March 21, 2007/301-427-2002/Samuel.Williamson@noaa.gov